Date: Mon, 11 Apr 94 04:30:57 PDT
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>
Errors-To: Ham-Space-Errors@UCSD.Edu
Reply-To: Ham-Space@UCSD.Edu
Precedence: Bulk
Subject: Ham-Space Digest V94 #87
To: Ham-Space

Ham-Space Digest Mon, 11 Apr 94 Volume 94 : Issue 87

Today's Topics:

2 Line ElSets
ANS-099 BULLETINS
APT-Satellites: Report APR 10, 1994
ORBS098.WEATH.AMSAT
Oscar Antennas ??
OSCAR MODE S
STS-59 Orbital State Vectors Rev #19

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 10 Apr 94 17:57:56 GMT
From: news-mail-gateway@ucsd.edu
Subject: 2 Line ElSets
To: ham-space@ucsd.edu

Hello, My name is Mike Johnson. I am looking for a source for
USSPACECMD/NORAD type 2 line element sets for a varity of vehicles (primarily
16609).

Any help in finding this (these) source(s) would be greatly appreciated.
I can also be contacted at johnsonm@Rush.aps.rl.af.mil

Thank you for your time.

73 N7WBO

Date: Sun, 10 Apr 1994 16:25:51 MDT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!news.intercon.com!panix!
zip.eecs.umich.edu!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!ve6mgs!
usenet@network.ucsd.edu
Subject: ANS-099 BULLETINS
To: ham-space@ucsd.edu

SB SAT @ AMSAT $ANS-099.01
W5RRR/JSC ARC LANDLINE BBS

HR AMSAT NEWS SERVICE BULLETIN 099.01 FROM AMSAT HQ
SILVER SPRING, MD APRIL 9, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-099.01

New Landline BBS Provides STS-59 SAREX Information

The Johnson Space Center Amateur Radio Club has set up a telephone computer bulletin board (BBS). The purpose of the BBS is to provide a source of current Space Shuttle mission Keplerian Elements.

There are limited number of BBS files available for downloading. Among the current files are:

- Current and old element sets for the mission in progress
- Current mission information
- Shuttle Amateur Radio Experiment (SAREX) information
- Recent Space Shuttle Mission Schedules and Manifests
- Astronaut/Cosmonaut Ham List
- Current JSC Amateur Radio Club Newsletter

We ask that no files be uploaded to the BBS. The telephone number is (713) 244-5625. Our modem can handle all bauds up to and including 9600 baud. The parameters are N-8-1.

The BBS is currently running in ProComm HOST mode, so the logon is very simple and downloading is easy. After logging in, you will see the Welcome Screen describing the BBS. Also, the Welcome Screen contains the current and latest element set number (e.g., JSC008) loaded on the BBS. Check it against your last set so you won't waste your time duplicating a set you already have. Press ENTER to bring up the second page containing the current Space Shuttle Keplerian Element Set. If you have a file capture or screen capture function in your communications software, then you should use it for this page. That way, you won't have to go through the file download process if all you wanted was the latest element set. If you have any comments for the Club or BBS sysop, leave a message and we

will respond.

[The AMSAT News Service would like to thank Dale Martin (KG5U), KG5U @
 KA5KTH.#setx.tx.usa.na, Secretary of the Johnson Space Center ARC
 Houston, Texas (W5RRR)]

/EX
SB SAT @ AMSAT $ANS-099.02
FUJI AWARD PROGRAM DETAILS

HR AMSAT NEWS SERVICE BULLETIN 099.02 FROM AMSAT HQ
SILVER SPRING, MD APRIL 9, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-099.02

JJ1WTK Provides Information About "FUJI" Award

Amateur Satellite "Fuji", SWL Amateur Satellite "Fuji" applicants are required to make contacts with 10 different amateur stations through the amateur radio satellite "Fuji" (only contacts in CW or SSB mode), and obtain the QSL cards from those stations. This award applies for both FO-12 (JAS-1) which was launched at 20:45 UTC in 12-AUG-1986 and JAS-1B which was launched on 07-FEB-1990. Any contact thru FO-12 or FO-20 is good for the "Fuji Award" application. A fee of 8 IRCs or US $4 will be charged per award. An additional 2 IRCs will be charged for air mail delivery regardless of the number of the awards claimed. If QSL cards are submitted, sufficient funds for return postage will also be required. All correspondences should be sent to:

Japan Amateur Radio League - Award Desk,
1-14-2 Sugamo, Toshima, Tokyo 170, Japan

[The AMSAT News Service would like to thank Kazu Sakamoto (JJ1WTK) for this
 bulletin item. JJ1WTK can be reached at his e-mail address of
 qga02014@niftyserve.or.jp]

/EX
SB SAT @ AMSAT $ANS-099.03
POSAT-1 VOICE CONTACTS

HR AMSAT NEWS SERVICE BULLETIN 099.03 FROM AMSAT HQ
SILVER SPRING, MD APRIL 9, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-099.03

CT1ERC Reports POSAT-1 Voice Contacts Made

CT1ERC reports that a special event amateur satellite station, CU2APO, was

setup on the island of San Miguel in the AZORES for a technical exhibition to a youth grounp using POSAT-1. This demonstration was arranged by the PoSAT Consortium in which they agree to switch the satellite to operate on the amateur frequencies and it was configured as a FM transponder for a single pass to allow voice contacts between this island in the middle of the Atlantic ocean and the continent. Everything was arranged overnight and on short notice so unfotunately there was not enough time to send out notices of this event for other radio amateurs to participate. However, CT1ERC wishes to pass allong his report of the this first time voice contact on POSAT-1.

"The uplink frequency was 145.975 MHz and the downlink frequency was 435.275 MHz which by coincidence is a frequency with alot of strong QRM at CT1ERC's QTH. At 12:28 UTC 24-FEB-1994, with the satellite heading from North, the mutual window between CT1ERC's station (located in the extreme North of Portugal) and CU2APO (located in the extreme West, half way to N. America) opened and he exchanged a QSO with Pedro Carvalho (CT1DBS). The reports were both S59 but only for short periods, due to the strong bursts of QRM which made communication very difficult. One minute later there appeared Miguel Gomes (CT1EVH) operating the club station CS1APO located in Lisbon and Artur Gomes (CT1DIA) located in Faro (extreme South of Portugal). The QRM affected all stations except CT1DIA who have copy all of us during the whole pass with reports between S57 and S59. Sometimes during the pass two Spanish stations, apparently mobile, in a QSO on the VHF band were completly unaware that they were using a satellite uplink and reaching the downlink with S55 to S57."

CT1ERC wants to thank to the the Consortium for made the satellite available for 10 minutes and to Pedro, CT1DBS, for all his efforts and hours spent in convencing the POSAT Consortium to allow this demonstation to happen.

[The AMSAT News Service (ANS) would like to thank Jose Carlos (CT1ERC) for this bulletin item.]

/EX
SB SAT @ AMSAT $ANS-099.04
AO-13 OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 099.04 FROM AMSAT HQ
SILVER SPRING, MD APRIL 9, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-099.04

Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz. If, at

the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
18-Apr-94	0100	B	188	W5IU	WA5ZIB
23-Apr-94	1800	B	180	VE2LVC	W9ODI
30-Apr-94	2130	B	176	W9ODI	VE2LVC
09-May-94	0000	B	175	W5IU	WA5ZIB
14-May-94	1700	B	167	WA5ZIB	W5IU
21-May-94	2130	B	185	VE2LVC	W9ODI

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations, are encouraged to join the OPS Nets. If neither of the Net Control Stations show up, any participant is invited to act as the NCS.

Slow Scanners are invited to join the SSTV sessions on AO-13. The frequency is 145.955 MHz. The net meets at 45 minutes before Mode S, and on Mode B following Mode S on Saturdays and Sundays. Join those sessions or convey your wishes for other SSTV skeds to wb6llo@amsat.org, and he will coordinate your efforts.

/EX
SB SAT @ AMSAT $ANS-099.05
WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 099.05 FROM AMSAT HQ
SILVER SPRING, MD APRIL 9, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-099.05

Weekly OSCAR Status Reports: 09-APR-94

AO-13: Current Transponder Operating Schedule:
M QST *** AO-13 TRANSPONDER SCHEDULE *** 1994 Apr 07-Jul 11
Mode-B : MA 0 to MA 170 |
Mode-BS : MA 170 to MA 218 |
Mode-S : MA 218 to MA 220 |<- S beacon only
Mode-S : MA 220 to MA 230 |<- S transponder; B trsp. is OFF
Mode-BS : MA 230 to MA 250 | Blon/Blat 230/-5
Mode-B : MA 250 to MA 256 |
Omnis : MA 250 to MA 120 | Move to attitude 180/0, Jul 11
[G3RUH/DB2OS/VK5AGR]

FO-20: The following is the current schedule for transponder operations:

ANALOG MODE:
20-Apr-94 7:35 -to- 27-Apr-94 7:55 UTC
11-May-94 6:54 -to- 18-May-94 7:20 UTC
Digital mode: Unless otherwise noted above.
[Kazu Sakamoto (JJ1WTK) qga02014@niftyserve.or.jp]

AO-27: DL6AAU reports that he has hear some "big" signals from AO-27 with a indoor groundplane antenna without preamp. He receives signals S56 to S59 from stations on Buffin Island, which for DL6AAU, is considered a DX contact. DL6AAU notes that AO-27 really better signal than its famous "cousin" AO-21. [DL6UAA]

AO-21: A new digital voice message started to transmit this week on AO-21 on the occasion of the AMSAT-OE meeting. The actual schedule is as follows:

RUDAK-II Schedule: (Downlink 145.987 MHz, Uplink 435.016 MHz)
min/10 Beacon Mode
0..6 FM Repeater
7 Digital Audio
8..9 AFSK TLM

The following is the message that is broadcasted on AO-21 during the packet beacon downlink: "++ Hi, this is the RUDAK-II experiment on AMSAT OSCAR 21 ++ On occasion of the first AMSAT-OE meeting we send greetings to HAM's & all over the world. We wish you to have PEACEFUL contacts via amateur radio!" Reports are welcome to:

HTL
Amateur Radio Group
Anichstr. 46
A-6020 Innsbruck
Austria

[LW2DTZ]

KO-23: Working well and has a new pair of images. [WH6I]

KO-25: Also working well. [WH6I]

IO-26: Working well on the secondary frequency as advertised. [WH6I]

AO-16: Working well. [WH6I]

LO-19: Also working well. [WH6I]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on

INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

/EX

Date: Mon, 11 Apr 1994 07:17:30 GMT
From: ihnp4.ucsd.edu!swrinde!emory!darwin.sura.net!newsserver.jvnc.net!gmd.de!NewsWatcher!user@network.ucsd.edu
Subject: APT-Satellites: Report APR 10, 1994
To: ham-space@ucsd.edu

Observed at station 50.7 NLat, 7.1 ELon, APR 10, 1994

NOAA-9:   APT 137.62 ON again
NOAA-10:   APT 137.50 On
NOAA-11:   APT 137.62 On
NOAA-12:   APT 137.50 On
Meteor 3-5: APT 137.85 On

NOAA-9 is back again. The vis-images of the late morning descending passes show better illumination than those from late afternoon ascending NOAA-11 which slowly drifts into darker evening. NOAA-9 approaches 10 years of useful life in orbit.

+--+
|Peter Henne (peter.henne@gmd.de) |
| (henne@gmd.de) |
|German Nat.Research Center.f.Comp.Science |
|D-53754 St.AUGUSTIN, Germany |
+--+

Date: Sun, 10 Apr 1994 00:48:00 -0600
From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!ve6mgs!usenet@network.ucsd.edu
Subject: ORBS098.WEATH.AMSAT
To: ham-space@ucsd.edu

SB KEPS @ AMSAT $ORBS-098.W
Orbital Elements 098.WEATHER

HR AMSAT ORBITAL ELEMENTS FOR WEATHER SATELLITES
FROM WA5QGD FORT WORTH,TX April 8, 1994
BID: $ORBS-098.W
TO ALL RADIO AMATEURS BT

Satellite: NOAA-9
Catalog number: 15427
Epoch time: 94096.96691714
Element set: 774
Inclination: 99.0631 deg
RA of node: 146.5985 deg
Eccentricity: 0.0016149
Arg of perigee: 62.1791 deg
Mean anomaly: 298.1005 deg
Mean motion: 14.13604747 rev/day
Decay rate: 1.04e-06 rev/day^2
Epoch rev: 48028
Checksum: 329

Satellite: NOAA-10
Catalog number: 16969
Epoch time: 94096.95319952
Element set: 673
Inclination: 98.5122 deg
RA of node: 108.1277 deg
Eccentricity: 0.0012929
Arg of perigee: 173.0330 deg
Mean anomaly: 187.1032 deg
Mean motion: 14.24877528 rev/day
Decay rate: 5.4e-07 rev/day^2
Epoch rev: 39246
Checksum: 326

Satellite: MET-2/17
Catalog number: 18820
Epoch time: 94093.66879616
Element set: 276
Inclination: 82.5429 deg
RA of node: 327.8717 deg
Eccentricity: 0.0018087
Arg of perigee: 33.1391 deg
Mean anomaly: 327.0888 deg
Mean motion: 13.84712948 rev/day
Decay rate: 7.2e-07 rev/day^2
Epoch rev: 31204
Checksum: 340

Satellite: MET-3/2

```
Catalog number: 19336
Epoch time:      94089.83574800
Element set:     272
Inclination:       82.5443 deg
RA of node:        19.1260 deg
Eccentricity:    0.0018339
Arg of perigee:    97.2779 deg
Mean anomaly:     263.0433 deg
Mean motion:   13.16965918 rev/day
Decay rate:        5.1e-07 rev/day^2
Epoch rev:           27294
Checksum:              324

Satellite: NOAA-11
Catalog number: 19531
Epoch time:      94083.23885812
Element set:     572
Inclination:       99.1670 deg
RA of node:        70.0925 deg
Eccentricity:    0.0012545
Arg of perigee:    15.7107 deg
Mean anomaly:     344.4450 deg
Mean motion:   14.12969487 rev/day
Decay rate:        6.2e-07 rev/day^2
Epoch rev:           28322
Checksum:              300

Satellite: MET-2/18
Catalog number: 19851
Epoch time:      94093.77791533
Element set:     275
Inclination:       82.5203 deg
RA of node:       203.2318 deg
Eccentricity:    0.0015846
Arg of perigee:    76.3600 deg
Mean anomaly:     283.9325 deg
Mean motion:   13.84360581 rev/day
Decay rate:        7.0e-07 rev/day^2
Epoch rev:           25739
Checksum:              316

Satellite: MET-3/3
Catalog number: 20305
Epoch time:      94096.89802122
Element set:      19
Inclination:       82.5496 deg
RA of node:       319.2682 deg
Eccentricity:    0.0006914
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Arg of perigee:    92.4930 deg
Mean anomaly:     267.6966 deg
Mean motion:   13.04406356 rev/day
Decay rate:        4.4e-07 rev/day^2
Epoch rev:           21360
Checksum:              303

Satellite: MET-2/19
Catalog number: 20670
Epoch time:      94092.98290424
Element set:     777
Inclination:       82.5407 deg
RA of node:       268.1974 deg
Eccentricity:    0.0016849
Arg of perigee:     2.5004 deg
Mean anomaly:     357.6234 deg
Mean motion:   13.84189785 rev/day
Decay rate:        2.4e-07 rev/day^2
Epoch rev:           19021
Checksum:              326

Satellite: FY-1/2
Catalog number: 20788
Epoch time:      94096.57359175
Element set:     935
Inclination:       98.8347 deg
RA of node:       118.9912 deg
Eccentricity:    0.0013640
Arg of perigee:   203.7746 deg
Mean anomaly:     156.2787 deg
Mean motion:   14.01311548 rev/day
Decay rate:       -2.9e-07 rev/day^2
Epoch rev:           18367
Checksum:              340

Satellite: MET-2/20
Catalog number: 20826
Epoch time:      94094.25698003
Element set:     786
Inclination:       82.5246 deg
RA of node:       204.7890 deg
Eccentricity:    0.0011958
Arg of perigee:   255.0900 deg
Mean anomaly:     104.8936 deg
Mean motion:   13.83576540 rev/day
Decay rate:        8.0e-07 rev/day^2
Epoch rev:           17753
Checksum:              319
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```
Satellite: MET-3/4
Catalog number: 21232
Epoch time:      94093.84087512
Element set:     684
Inclination:       82.5414 deg
RA of node:       222.1406 deg
Eccentricity:    0.0013588
Arg of perigee:    17.3282 deg
Mean anomaly:     342.8306 deg
Mean motion:   13.16460528 rev/day
Decay rate:        5.0e-07 rev/day^2
Epoch rev:           14157
Checksum:              280

Satellite: NOAA-12
Catalog number: 21263
Epoch time:      94093.55971056
Element set:     989
Inclination:       98.6259 deg
RA of node:       122.9593 deg
Eccentricity:    0.0014150
Arg of perigee:    91.5218 deg
Mean anomaly:     268.7581 deg
Mean motion:   14.22387096 rev/day
Decay rate:       1.46e-06 rev/day^2
Epoch rev:           14992
Checksum:              338

Satellite: MET-3/5
Catalog number: 21655
Epoch time:      94097.16784425
Element set:     692
Inclination:       82.5566 deg
RA of node:       166.8994 deg
Eccentricity:    0.0014492
Arg of perigee:    19.2230 deg
Mean anomaly:     340.9434 deg
Mean motion:   13.16829137 rev/day
Decay rate:        5.1e-07 rev/day^2
Epoch rev:           12711
Checksum:              319

Satellite: MET-2/21
Catalog number: 22782
Epoch time:      94093.48854630
Element set:     286
Inclination:       82.5455 deg
```

```
RA of node:       265.6275 deg
Eccentricity:    0.0023942
Arg of perigee:    74.0584 deg
Mean anomaly:     286.3202 deg
Mean motion:   13.83003079 rev/day
Decay rate:        1.5e-07 rev/day^2
Epoch rev:            2976
Checksum:              313

/EX

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Date: Sun, 10 Apr 94 04:43:16 EDT
From: ihnp4.ucsd.edu!agate!usenet.ins.cwru.edu!ncoast!nshore!railnet!barf80!
wb8k@network.ucsd.edu
Subject: Oscar Antennas ??
To: ham-space@ucsd.edu

What the latest gossip concerning what good & what isn't on Oscar yagi's
for mode B & J.. KLM, M sqrd etc. Any comments?? The old Cushcraft AOP 1
pkg I have been using for a few years rally barks, especially in wet
weather.
/e

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Dennis jakubisin
InterNet: wb8k@barf80.nshore.org
Basic Amateur Radio Frequency, BARF-80 +1 216/237-8208
"Totally devoted to Amateur Radio" - 24 Hrs a day 8/N/1 14.4k-300 baud

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Date: Sun, 10 Apr 94 04:40:56 EDT
From: ihnp4.ucsd.edu!agate!usenet.ins.cwru.edu!ncoast!nshore!railnet!barf80!
wb8k@network.ucsd.edu
Subject: OSCAR MODE S
To: ham-space@ucsd.edu

Anyone know of an inexpensive (less that the $300+ commercial converters)
way to get on Mode S. How about converting some of the TVRO LNA/B's down
in freq??

----------------------------
Dennis jakubisin
InterNet: wb8k@barf80.nshore.org
Basic Amateur Radio Frequency, BARF-80 +1 216/237-8208
"Totally devoted to Amateur Radio" - 24 Hrs a day 8/N/1 14.4k-300 baud
```

Date: Sun, 10 Apr 1994 23:46:21 GMT
From: netcomsv!netcom.com!astroman@decwrl.dec.com
Subject: STS-59 Orbital State Vectors Rev #19
To: ham-space@ucsd.edu

```
Vector format = 1017
Satellite Name:         STS-59
Catalog Number:         23042  94020A
Epoch Date/Time:        94100.57055586805
                        04/10/1994  13:41:36.026 UTC
ECI X:                    -3937556.326925 ft
M50 Y:                   -21265094.628949 ft
    Z:                      893696.336028 ft
    Xdot:                     13919.98047 ft/s
    Ydot:                     -1683.85425 ft/s
    Zdot:                     21317.14844 ft/s
ndot/2 (drag):              0.00852427365 rev/day^2
nddt/6:                       0.00000E+00 rev/day^3
Bstar:                        0.00000E+00 1/Earth Radii
Elset #:                                5
Rev @ Epoch:              19.00766840912
```

MSDOS/PC software is available for conversion of
OSV to 2 Line Keplerian Elements via ftp to:
oak.oakland.edu:/pub/msdos/hamradio/v2l9331.zip
and the SIMTEL archives.

State Vectors courtesy Ken Ernandes N2WWD

SM

Date: Sun, 10 Apr 1994 16:45:58 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!wupost!csus.edu!netcom.com!
netcomsv!telesoft!garym@network.ucsd.edu
To: ham-space@ucsd.edu

References <STS-59.94098.748@alsys.com>, <STS-59.94099.706@alsys.com>,
<STS-59.94100.261@alsys.com>
Reply-To : elements-request@alsys.com
Subject : STS-59 Element Set (94100.508)

```
STS-59
1 23042U 94020A   94100.50837479 +.00138539  11054-4  68156-4 0    99
```

```
2 23042  56.9923 258.8619 0009096 276.5312  83.4741 16.20610868   180

Satellite: STS-59
Catalog number: 23042
Epoch time:      94100.50837479         (10 APR 94   12:12:03.58 UTC)
Element set:     GSFC-009
Inclination:       56.9923 deg
RA of node:       258.8619 deg          Space Shuttle Flight STS-59
Eccentricity:    0.0009096                  Keplerian Elements
Arg of perigee:   276.5312 deg
Mean anomaly:      83.4741 deg
Mean motion:   16.20610868 rev/day      Semi-major Axis: 6596.0261 Km
Decay rate:       0.14E-02 rev/day*2    Apogee  Alt:        223.64 Km
Epoch rev:              18              Perigee Alt:        211.64 Km

(for Shuttle Elements subscription info, email: listserv@alsys.com)

--
Gary Morris            Internet: elements-request@alsys.com
KK6YB                  Packet:   KK6YB @ N0ARY.#NOCAL.CA.USA.NA
San Diego, CA, USA     Phone:    +1 619-457-2700 x128

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End of Ham-Space Digest V94 #87
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